



Digital anthropology : The Internet as Virtual Museum

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Symposium

Systematization of Non-written Cultural Materials for the study of Human Societies

Center of Excellence Project
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Digital Anthropology

The Internet as Virtual Museum

First of all, I would like to thank Kanagawa University for giving me the opportunity to continue working on the important set of issues raised by its COE program. I strongly believe that the problems here researched and debated participate in a mutation of academic research and teaching, extending their scope beyond national and nationalistic borders. I would like also to thank Professor Matoba, who invited me to participate in this research in 2005 and who renewed his invitation this year. I also thank Mr. Lesigne, who is often an efficient go-between Professor Matoba, the COE project and myself. I greatly appreciate his research on Japanese anthropology, on Yanagita Kunio in particular: it helps me to understand better the evolution and focus of this project. Finally, I would like also to thank Ms Hasegawa, which has always been patient and very efficient.

My goal this year is to further develop the theoretical approach introduced last November by showing some concrete outcomes, which can be expected in the near future, in a typical a *Research and Development* approach. The program of this conference, "Understanding human culture through illustrated materials, folk implements and landscapes", proves the choices, which have been made by the program's researchers. My perspective in this communication concerns the institutional and technological environment of the Kanagawa project. It concerns the forest more than the trees. Of course there is no forest without trees. Still all the trees make a forest and forests have their own set of problems and issues.

I would also like to stress that I do not pretend to develop ideas not yet formulated and debated by the members of this project. But such an ambitious project needs to hear and associate many different voices. In this case, redundancy is a confirmation and a complementary perspective. The ideas I might bring to this project have value only if they are

reconstructed by other researchers and lead to knowledge advancement. This is my only ambition.

I develop the argument that the Kanagawa Project can be understood as the construction of an on-line or virtual museum dedicated to the comparative study of Human Societies, a virtual museum for a digital anthropology. The museum is the institutional model of the whole project. But in return, the project is also a reconstruction of the concept of museum. I will explain what justifies this perspective and will explore the consequences of this approach.

1. Virtual museum

In order to construct this argument, I need first to situate my approach. This explains why I added last year at the end of my paper a list of my publications related to your project. When I discovered your program, my first reaction was that the “Systematization of Non-written cultural materials” was exactly the purpose of museums when they constitute collections, with the goal to present these collections to the general public through various types of exhibitions. To create a collection is not to buy and gather artifacts but to select and organize acquisitions in order to constitute a coherent collection and to organize and design exhibitions with the goal to educate a public outside established academic, schooling and training institutions. Your project appeared to me, as it probably did to many people, as the Research and Development of a new sort of collection, extended to all non-written materials with the goal to present these collections to all people concerned with the study of Human Societies. The goals are many but what they have in common is to generate a new level of Research and Education.

To explain this interpretation of your project, I need to refer to my education and my own research at a given moment of my career. My training is in philosophy of science and technology. My research is in Epistemology. I mainly study how Human and Social Sciences describe and explain the evolution of Science and Technology in various societies (Western Europe, Japan and the US), the production and distribution of Knowledge in general. In the early 1980ies, it became clear in Japan, the US and Western Europe that recent progress in science and technology would transform *modern* societies. It would touch all aspects of society and require from all of us different skills and a new understanding of the internal interaction of society and knowledge, extending beyond the technical training and the scientific competence proper to an “industrial society”. The core of this transformation in the 1980ies was the emergence of digital technology. With the Internet, digital technology became in the 1990ies the common infrastructure of advanced industrial societies.

In the 1980ies, I participated in a movement associating many different people who intended to explain to the general public the transformation of the content, role and organization of knowledge in our societies. We thought necessary to reach beyond

educational institutions, beyond the borders of universities, schools and professional training. This new “grand transformation” (Karl Polyani¹) required new research on this mutation by Human and Social Sciences, new institutions to communicate this research and also to organize debates on these many changes. It was and it still is a political duty, essential for the formation of a meaningful “civil society”. The problem was not to train people; schools and universities were doing it. The problem was to give the general public the means to explore, debate and assimilate what was happening in society and the consequences for their own lives.

In the 1980ies, museum was thought the best place to communicate these changes to the public. Museums were understood as occupying an intermediate situation between the public and academic institutions. Science and Technology museums or centers were built and are still being built in all main cities. Existing science museums were renovated, new aisles or buildings were and are still added. In retrospect, this was quite an interesting conjuncture. Already at that time, the media were not considered able to fulfill this task: they were following a commercial evolution incompatible with such this content and this goal. It was not that the public was not interested or that these issues were not considered important. It was considered a marginal business opportunity because such programs would not generate enough profit. In fact, the press and the *written media* in general were considered a field of communication and learning too narrow to make people experience the scope of these changes. Still books, newspapers and magazines provided and still provide information and explanation. So the written media had an important role to play but their range of communication and learning was too narrow to express these changes to the public. They were based on a *remote* interaction, which should be supplemented by other or *new media* based on visual and sound interaction. In the early 1980ies, TV was already considered a lost case: due to production costs and political change, national broadcast systems were renouncing expressing the “public” or “national” interest. Private and public broadcasting companies were shifting toward satisfying “the demand of the broad public”, entertainment, news and films. TV relied on basic narrative forms, which were shaping how people felt and reacted, how people understand the world and communicate to each other.

In the early 1980ies, the museum was considered a media in its own right, below, or above, the distinction between art and science. “Museum” was the name given to an institution imagined at the beginning of the techno-scientific revolution, when the idea of a Knowledge Society was just taking shape. This museum did not exist and it still does not exist. It was in fact a “virtual museum”, the search but also the need for a different or new media, with one leg in the academic world, in R&D laboratories still bound to printed world, and one leg in the general public under the influenced of mass media, of TV in particular. The concept of this imagined museum was valid and already well-formed. As a media, the virtual museum has the following characters:

¹ *The Great Transformation*, New York, Rinehart & Company, Inc, 1944

- It is “non-distant”:
 - . an *environment*, not a “spectacle” transmitted by a media;
 - . it was an *immersive* environment: people are not in front of a screen or a scene, they were “on stage”, “hands on”.

- It is a *learning environment* made for visitors, not for spectators. A *visitor* moves within this environment; he or she does not sit in a sort of theater in front of a stage or a screen where *action* is represented. The learning experience provided by this kind of museum affects all senses. It associates different sources of information and different cognitive interactions, all taking place within an exhibition. An *exhibition* is an environment built for the purpose of providing to the public a multi-sensory experience with cognitive outcomes.

- It develops a specific type of learning. This conception and practice of learning is not based on reading texts but on *exploring and decoding* an immersive environment made of *signs*.

- A virtual museum provides *informal learning*. The signs constituting such an environment cannot be completely decoded by any visitor. Incomplete or open decoding is part of this learning experience often named “intuitive” or “affective”. The visitor circulates within an exhibition according to her or his own preconceptions². But the structure of the exhibition is designed to interact with these preconceptions in order to change or rectify them. This falsification and reconstruction of these preconceptions is a full learning process, specified by the following criteria.

- It is *interactive*. As the forerunner of the electronic medium, the printed medium and TV remained “passive media”, very different from daily informal learning experience characterized by learning by doing, by acting and reacting, by imitation of a model and adaptation of this model to a given situation. *Interactivity* is conceived as the reproduction or model of *real life* learning in a constructed environment.

- Interactivity reproduces an *individualized learning* process, cutting across age groups, levels of education and competence. The printed media and TV provide the same *document*³ to everyone or a different *document* to a selected group (at school, a class). Interactivity and individualization are pre-organized within the *document* itself and activated by the technology communicating the document.

² I follow the main contribution of museum studies, especially the work of Chandler Scriven.

³ “Document” is here defined as information or “material” structured in a given media. A “document” is defined according to the potential public for which it is constructed.

“Immersive”, “informal”, “interactive”, “individualized”, “virtual” are the five key characters constituting the concept of a virtual museum. Flourishing since the 1980ies, Museum Studies introduced the distinction between “informing” and “motivating” derived from Educational Psychology. Information and motivation are the two parameters of all learning strategy: museums are supposed to *motivate* better than they *inform*. A virtual museum should be able to motivate as well as to inform.

2. A concept and a model

The culture of the modern world is structured around two main institutions, the Library and the Museum. Since the 1980ies, in an emerging techno-scientific world, these two institutions have started to converge towards a new structure and a new institution. According to my analysis, the “virtual museum” is the concept of this new institution. The Kanagawa Project presupposes and also introduces the concept of “virtual museum”, even if it develops only part of this concept. In summary, the Kanagawa Project intends to assemble and also produce “information”; it intends to transform this information into a “collection” and, finally, it intends to make these collections available for research and education, for the study of “human societies”.

This last point is important because it concerns the university and the possibility to transform the way this institution produces knowledge, the way it teaches and does research. This is the reason why it is quite important to explore all aspects of the Kanagawa University project. In the Kanagawa’s case, the information consists of “non-written cultural materials”. The collection is supposed to be produced by the “systematization” of these materials. Finally, the problem is to communicate this “systematized material” in order to achieve the goal, the “study of human societies”.

The objective of my analysis is to prove that digital technology does not simply provides utensils to achieve this goal. Technology is not a set of tools at the service of *goals* defined outside the *means* by which *goals* can be achieved. My objective is to prove that both the project and the goal presuppose digital technology. Digital technology is the source and the inspiration of the whole project. The reason is simple: the concept of a virtual museum found its expression, content and validity in digital technology and the main outcome of this technology, the Internet. Because of e-mail and e-phone, search engines or chap boxes, the Internet is of course a communication technology. But more profoundly and broadly, the Internet is both a Library and a Museum, the convergence of these two modern cultural and scientific institutions. This explains why a company like *Google* developed the project to digitalize large American university libraries in order to provide access on the web for free to these collections. This is also the reason why *Microsoft* is developing *Wikipedia*, a free and open, on-line encyclopedia, which already turns out to reach a level of accuracy similar to the *Encyclopedia Britannica*. In my opinion, the Kanagawa University project participates in the

development of a *global e-museum*. This explains why the concept of “virtual museum” helps to understand better this project. It helps also to clarify its presuppositions and the notions used to formulate the project.

My goal is now to apply the concept of “virtual museum” and to explore how digital technology can conceptualize various problems and issues.

3. Digital anthropology: structuring the field

As I mentioned before, the “systematization of non-written cultural materials” is the constitution of a collection. Because digital technology shapes the project, this process can be clarified from the point of view of both digital technology and the Internet. We will then have to understand the exact role of the Internet, because the Internet also shapes the project. The researchers participating in this project have certainly raised already the questions I will be dealing with. I probably repeat what has already been debated. This repetition is not useless: it is a further clarification, a verification and a reinforcement.

- The *stuff*

“Cultural materials” are the set of information, which will constitute a *collection* once “systematized”. That the elements of the collection are “non-written” explicitly indicates that this project builds a sort of museum, not a sort of library. But the idea of “non-written cultural materials” is an open field, too large and ambiguous to be *collected* because it covers all the *stuff*, all the “material” constituting “human societies”. This stuff is “human” in the sense that it is *man-made*, more precisely *society-made*.

- “Written materials”

The role of digital technology requires clarifying and evaluating the distinction between “non-written” and “written” materials. “Non-written” covers everything existing in a society underneath or above, before or outside, various types of “systematization” leading to “writing”. “Written” covers everything taking the form or shape of writings, books and printed books. But some printed materials are not books or book-like, for instance Japanese prints. Furthermore European paintings in the 17th century, for instance the work of Nicolas Poussin in France, have to be considered a sort of written material because they are based on an explicit aesthetic theory, “ut pictura poesis” (poetry like painting), which specifies a clear and precise connection between text and image. To view an image is (like) reading a text. This European code of *representation*⁴ was globally valid until the end the 19th century, until the rise of “modern art”. European painting should therefore largely belong to the category of

⁴ See for instance Jacques Rancière, *Le destin des images*, Paris, La fabrique, 2003, p 129-134.

written material. But it is not clear at all if Japanese print of the 18th and 19th centuries truly belong to a different aesthetic than West-European classical painting⁵. Therefore the distinction between “written” and “non written” means something different.

In this distinction, writing is understood as a type of coding, of conceptualization and related cognitive activities classifying the social *stuff* in order to produce “written materials”, materials whose formal structure is similar to writing and the type of reading, understanding and communication proper to writing. From this point of view, I cannot judge how much Chinese writing differs from the alphabet. But Chinese writing is certainly a type of coding, of identification and classification associated to a type of reading, understanding and communication. We reach therefore a level deeper than the difference between writing/reading techniques and culture. There are for instance literature and books in China and Japan as well as in France or Germany.

- “Non-written materials”

Therefore, the goal of the notion of “non-written materials” is to distinguish different types of coding and related cognitive activities organizing nature and society outside *writing*. This is what Ethnology, Anthropology in general usually study. It covers the open field of individual and collective practices and behaviors, which develop and are transmitted outside or besides writing. These are also techniques to organize nature, time and space, life, bodies, minds and even whole societies. The distinction between techniques and practices is convenient but it can also be misleading: a technique does not exist without a practice to use it and a practice also supposes a technique.

Techniques do not exist separately from each other; they are associated in a *system*⁶, which evolves according to its own constraints. This evolution does not lead to writing and books, in a form of Hegelian self-awareness. It does not evolve according to the shape of a global conscience whose destiny would be to end up as books in libraries.

- *Writing*

European history shows that “writing” is also a technique. Indeed *writing* is a technique, which in ancient Greece codified other techniques within the existing system and evolution lead to the invention of what is now called “science”. But in return, science is a technology to “write” (codify) knowledge. This codification thoroughly transformed the evolution of techniques in Western Europe. By extension, one can assert that, because it is a technique and a practice, *writing* belongs to the category of “non written materials”, like all techniques and practices.

⁵ Without having been influenced by it.

⁶ I refer here to the concept of « technical system » introduced by Bertrand Gille.

Beyond the various types of writing techniques to be observed in the world, writing can be defined as a recording process developed to register data, to store these data and compare them. This process produced knowledge but it also generated a growth of knowledge through a cumulative process. This is what Denise Schmandt-Besserat⁷ established in a research on the emergence of writing in Mesopotamia. She also demonstrated that the emergence of writing, of arithmetic and art⁸ is the same process⁹.

This proves that *writing* in the Kanagawa project needs to be understood beyond the “written” and “non written” distinction, with the restriction that the project focuses not on books but on techniques and practices, including writing techniques, to register, represent, identify, count, read and communicate¹⁰.

- **Changing Subject**

At this point, we cross a difficult and ambiguous problem. This problem concerns the *subject* of history, the *self-reflection* of history, which, in many cultures, certainly in East-Asia and in Europe, is considered to be constructed and expressed in writing, in inscriptions and books collected and classified in libraries. For a long time and many different cultures, the distinction between libraries and museums did not exist.

The problem of an emerging *subject* in world history is a difficult problem. Do we see in this world the birth of a self-reflection process or do we observe a process of regional self-reflexivity, the formation of regional collective subjectivities? Such a problem requires a specific inquiry. Still the Kanagawa project opens a path towards such an inquiry and, at one point, it probably cannot avoid debating this problem. This problem is both presupposed by the project and one of its main consequences. It is certainly a proof of its pertinence.

- **Immaterials**

“Non-written materials” are mainly non-materials or “*immaterials*”, in a sense derived from Jean-François Lyotard¹¹: the shape of a landscape, the design of a plow and the shape of the movements of a body required to use of this plough efficiently, the technique to build an efficient bow and to use this bow efficiently, to fabricate and to play a musical instrument, to design images and to communicate information through these images, to organize the private space of a house or the common space of a city, to train and use one’s body in order to dance, to make love and take pleasure or in order to satisfy bodily functions according to collective codes, to discipline one’s own body in order to control the movement of one’s hand in order to write signs and to discipline one’s mind in order to learn how to read these signs,

⁷ See Stanford lectures, Humanities Center, June 2004.

⁸ Art is here defined as *shapes* created or selected in order to identify objects

⁹ The question of the relation between speech, thought, writing, books, etc, is beyond the scope of this lecture. It was studied in my communication “Research and Education in the age of large-scale data bases” in November 2005.

¹⁰ In summary, it is established that *writing* is the name of “systematization” technology.

¹¹ Exhibition *Les immatériaux*, Centre Pompidou, Paris. The exhibition’s concept was constructed by Jean-François Lyotard.

etc. This endless list is the list of the social stuff, what I called in my November 2005 communication the “black matter” of our social universe.

Immaterials are “implicit” knowledge embedded in individual and collective behaviors, in structured practices and established techniques. They might eventually become “explicit”, be described and formalized in writing in order to be *saved* in order to be taught or simply memorized and stored. These practices and techniques are transmitted by imitation and repetition, not by written treaties, explicit methods or applied theories. Immaterial techniques are also embedded in material instruments (“implements”, *mingu*), tools and utensils, apparatus and machines. Bodies, societies and tools can be conceptually differentiated but they are in fact inseparable. Finally, *immaterials* include other *stuff*, which make a society: values, beliefs, ideas and ideals, rituals and organizations. These *immaterials* are not all implicit or unconscious; they are what people have in common in order to communicate and believe, what they talk about and debate.

Immaterials are not *things*; still they are real. Their effects can be observed in the physical world but also in the mental and collective world, in society, culture and in the economy as well. Their expression can be coded, analyzed and described by writing, in order to be stored in print, as written materials in libraries. But in their *immaterial* movement, design and process, they can be recorded in their very expression, yesterday by analogic and today by digital technology.

- “Culture”

The Kanagawa’s project supposes a conception of “culture”, which would need to be debated. It is apparently derived from the American school of cultural anthropology. Culture is understood from *bottom up*, as a system of practices and techniques, including the various “systematization” techniques ordering these practices and techniques and generating social patterns and institutions. On this perspective, culture is not defined as “contents” (ideas, ideologies, theories, creeds, etc) but as processes, patterns of behaviors, shapes and design of artifacts, space ordering and organization, bodily and mental disciplines. These processes are the “grammar” of society and the support of mental and speech representations. They are “unconscious” like the rules of grammar are beyond the awareness of speaking/writing individual subjects¹², but are still structuring their discourses, i.e. their *representations* of themselves, of the others and of their environment¹³.

- The risk of culturalism

¹² See Claude Lévi-Strauss, *La pensée sauvage* (*The savage mind*), Paris, Plon, 1964, post-face.

¹³ A further theoretical approach should examine how this conception of culture is related to the work of Norbert Elias, Claude Lévi-Strauss, etc, and also how these influences are reworked within the Japanese schools of anthropology at the source of Kanagawa’s project.

The distinction between written and non-written is ambiguous because it leads to other distinctions, which might eventually blur the goal of the Kanagawa project. The “written/non-written” distinction leads to the confusing distinction between explicit and implicit, but also to other risky distinctions between modern and non-modern (ancient, traditional), developed and underdeveloped, scientific and non-scientific, even occidental and non-occidental, oriental and non-oriental, etc¹⁴. At the bottom of this series of distinction lies a primitive opposition between “us and the other”. This opposition is obviously what the Kanagawa project intends to reject and overcome as shown by the collaboration it develops.

In the Kanagawa’s project, the purpose of the written/non-written distinction is obviously to define the problems and objects demarcating the field of a general anthropology based on digital technology. But in order to reach its full potentials, such a digital anthropology should extend to all societies beyond the distinction between “us and the others”, whoever the “us” and whatever the “others”. But that the project should extend to all societies does not mean that it should not be restricted to a given region, in Kanagawa’s case: East Asia. Still within a selected region, the opposition between “us and the others” remains a major obstacle.

- **Method: comparative**

This means that digital anthropology should potentially be extended to all societies and that it should not be restricted by any “we/the others” presuppositions. It should be limited only for methodological and empirical purposes. A digital anthropology is based on a comparative method and it develops a comparative perspective.

4. Digital systemization and the Internet

- **Summary of the argument**

What have I established until now? I first of all demonstrated that the evolution of digital technology and the diffusion of the Internet are now reaching a new step. This step can be characterized as the convergence of two types of institution and of the role these institutions play in our societies, the Library and the Museum. I have also shown how the changing role of the museum in advanced industrial societies since the 1980ies has led to a conception of its activities, which can only be fulfilled today by digital technology and the Internet. In return, this role of the museum and the criteria to fulfill this role lead to the conception of the Internet as a virtual museum. Because it is based on digital technology, the

¹⁴ The distinction “written/non-written” does either properly contrast the field of a general anthropology from the field of other Human and Social Sciences, which tend to study modern societies or the modern components of societies. Still anthropology belongs to the continent of Human and Social Sciences.

virtual museum overcomes the traditional difference between written and non-written materials. Furthermore, societies are made of practices, techniques, institutions and theories. These are all practices associated with different types of coding, storing, communication and learning. These processes are the infrastructure of societies. They constitute the field of a digital anthropology.

- **Digital collections**

The project to record, register, store and communicate these processes is made possible by digital technology. Digital technology is therefore a “systematization” technique. Digital artifacts can record all man-made and society-based documents, materials and immaterials. Bits ignore all differences at the source of digital data. It will certainly take time to digitalize social and cultural materials but it is only a question of time, of cost and market, according to the use our societies will make of these materials. But the need and passion to create collections, to store the past and the present of societies, the constant growth of materials considered worth to be preserved, are such that the virtual museum is a long term process, an engineering and nearly metaphysical task for years to come. These collections will be stored in large-scale databases. The ontological¹⁵ situation of these collections raises interesting epistemological problems. Large-scale databases are indeed a major component of the Internet¹⁶.

Considering my overall argument, I assert that we are situated just at the beginning of this process. Still the path opened by this process is already so predictable that it is possible to consider and manage its consequences. To project us today at the level of consequences, which might take years to come, is paradoxically the only solution to evaluate and debate these consequences in the hope to interact with the path leading to them¹⁷. The capacity to interact with the path of an evolution is the role and meaning of knowledge. To decipher this process is to make sense of this knowledge in the study of human societies. It is certainly a difficult and risky task but, once again, these are questions raised by the Kanagawa project.

- **A web-based virtual museum**

The Internet is much more than a communication and storage technology. It goes beyond providing access to information stored in databases reached at websites. The Internet is the collection of collections. It is becoming the instant and live museum. It fulfills indeed the five basic functions of the museum, as the task of the museum was imagined by industrial societies in the 1980ies. But these imagined museums proved impossible to build because

¹⁵ The status and reality of databases, of information stored in databases is a typical ontological debate of our time, with its related (pseudo) fears and anxieties.

¹⁶ I mentioned *Google* and the global library, *Microsoft* and *Wikipedia*, the on-line open encyclopedia; we need to add *Oracle* and the “new” *IBM* for large-scale databases.

¹⁷ In a different context, this is also the argument developed by Jean-Pierre Dupuy in his book *Pour un catastrophisme éclairé : quand l'impossible est certain*, Paris, Le seuil, 2002.

they were not “concrete” museums for material collection. They were real but virtual museums for digital artifacts and digital collections. More precisely they were multi-media collections in large-scale databases. Only the Internet can make sense of the imagined function of virtual museums.

In return, I assert that, for the moment at least, the virtual museum is the horizon of the Internet, of its social imagination and technological development. Beyond the present *Google*’s project to create a global on-line library by digitalizing collections of major US university libraries, the virtual museum stands in the future of the Internet¹⁸. The multi-media museum is a step the Internet will have to go through. All digital data will ideally be available on-line: museum collections, library collections, all recorded audio and video materials (films, past and present TV programs, photography and news, university courses, etc) as well as digital materials developed by programs similar to the Kanagawa project. In its remarkable ambition, the Kanagawa project not only requires digital technology, it also sets to the Internet goals not yet formulated and far from being reached. The Kanagawa project shows that a potential evolution of the Internet leads to a widening and deepening of our knowledge of Human Societies. This knowledge is what I call “Digital Anthropology”.

- **Digital Anthropology**

The field of Digital anthropology can be summarized in the following list of remarks and comments:

- . “digital” is the method and the “support” of this anthropology.
- . Digital anthropology is the comparative study of practices and techniques constituting the social environment, including the interaction of a society with the *natural* environment to which a given society is associated with, which it shapes, transforms or exploits according to its social structure and its technologies.
- . These practices and techniques also include the production of individual subjects, of their minds and bodies, as well as their interactions according to various patterns, rituals and institutions. These practices and techniques finally include the various techniques to code or systematize, to store and transmit knowledge, which is commonly associated with “writing”.
- . Knowledge is to be considered at the outcome of these practices and techniques. Knowledge is embedded in individual minds and bodies, in *skills* and *competences*, mental processes and bodily movements. But knowledge is embedded as well in collective patterns of behaviors. Knowledge is stored in various forms of coding, like writing, sciences, theories, databases, patents, etc. Any progress in practices and techniques is also a progress in

¹⁸ The Google project lead to the virtual library but will Google invent the multi-media museum? Will a new company reach this challenge and overcome Google? The cultural, industrial and technological challenge is huge because it concerns the control of all materials for the study and management of human societies.

knowledge as well as a transformation of a society and its related environment.

- . The first character of a digital technology is that it studies human societies from *below* or “bottom up”, starting by practices and techniques. It does not start from knowledge as it is recorded and registered in books stored in libraries or in other documents stored in museums. Digital anthropology investigates these techniques, which, at the end of a complex and evolving process, generate books, libraries and museums.
- . Secondly, “digital anthropology” is a general method experimented and valid for the study of all societies beyond the distinctions between modern and traditional, written and non-written. It is fundamentally comparative. It selects its objects of investigation according to the criteria of comparativeness.
- . Thirdly such an anthropology is digital because the emergence and development of digital technology made possible the recording, storage, communication and access as well as the comparison of all recorded and registered practices and techniques beyond the *modern* recording, storage and access based on books, printed materials in libraries and artifacts in museums.

5. Technological and industrial issues

The conception of a web-based virtual museum and the development of a comparative digital study of human societies raise difficult technological problems, with consequences for the software industry. This technological challenge is an important issue for the competition between companies and between nations for mastering the evolution of Information and Communication Technology and the Internet. It is possible to show how the Kanagawa project, as I see it, fits with two major research programs developed by the MITI in the early 1990ies. At the very moment when Japan was entering a fifteen-year long “decade” of crisis, the MITI and the Ministry of Education and Research were asserting that Japan’s future had to be grounded on restructuring and further developing Science and Technology policies. This goal has been carried on until today.

The creation and sharing of large-scale databases as well as a “human-like flexible” management of information were indeed a major issue for Information Technology Policies in Japan since the early 1990ies. This was the time when the Internet was being developed in the US. This research was considered a follow up of the famous *Fifth Generation Computer System* (FGCS), a ten years research program launched in 1982, which created quite a stir in the US and in Europe. Japan was accused by the US of attempting with this project to control the evolution of digital technology and its related industrial consequences. Technologically, the program was considered a failure. Still it opened in Japan various institutional reforms beneficial for Research and Development activities. In 1992, at the closing of the program, the

director general of MITI at that time, Kumano Hideaki, proclaimed that the program FGCS would be the “paradigm” of all future MITI projects¹⁹. Two programs quickly followed:

- a. *Real World Computing (RWC)*, a ten years project, which proved a dead-end around 1998²⁰. The goal of this project was processing information in real time through “massively parallel computing systems”. It turned out that the best solution was “distributed networking”, which lead around 2000 to “grid computing”.

RWC, the project and the failure as well as the solution is interesting because its goal was the capacity to manage the contents of large-scale databases, to identify, compare and compute these contents with the goal to manipulate these contents for various purposes, including research.

Mining and scanning multi-media databases require search engines of new generation capable not only to find keywords but also sequences of words, visual and/or sound patterns.

- b. *Knowledge Archives Project*, called “NOAH”, but known as “*Building and Sharing Very Large-Scale Knowledge Bases*” (KB-KS)²¹. It is the title of the first conference held in Tokyo in December 1993. The project was abandoned in September 1995 because it made no sense anymore. The Internet was providing the solutions: information was stored in distributed websites and it provided access to information at these websites.

These two Japanese ICT research programs took in the 1990ies a path, which proved impractical or marginal by comparison with research done on the Internet at that time in the US. Today these two programs can be understood in a different light. Certainly they could match the Internet or provide a feasible alternative. But they at least make sense. The Internet has become the world-wide communication infrastructure: web TV, on-line demands, web phones, virtual libraries and soon virtual museums require enormous storage capacity and also enormously powerful software to register, organize, scan and select these data according to social, economic and cultural demand and interest. Of course the Military and Defense establishment are the largest consumer and client of these technologies. But they are not the only one.

The needs and requirements for R&E, for Research and Teaching in the comparative study of human societies certainly lead to R&D with important commercial consequences. The Kanagawa project converges with a long-term trend in Japanese ICT policies. It has strong technological and commercial potentials, which might raise interest in high tech firms and Ministries.

¹⁹ Keynote speech, *International Conference on Fifth Generation Computer Systems*, Tokyo, ICOT, 1992, p 3.

²⁰ See Tom Gruber, “Report on very large KB conference”, ATIP Report, May 10, 1994.

²¹ *Building and Sharing Very Large-Scale Knowledge Bases*, Proceedings, Tokyo, Ohmsha, 1993.

6. Cultural mapping and over-mapping: a goal as conclusion

According to my analysis, the Kanagawa project appears to me as a major mutation and extension of anthropology, based on information and communication technologies, on the Internet and its potentials. In this paper, I tried to clarify the basic concepts of a digital anthropology. I also tried to identify some technological as well as commercial opportunities. To conclude, I would like to present some ideas on further outcomes of this project. This field of research is wide and difficult; the research is costly and multi-faceted. But at the same time, the project is remarkably clear and simple: available technologies open the possibility to transform and broaden the study of human societies. No one can deny this assertion. I don't see how anybody could question the relevance of this project, however difficult it might be to transform it into a manageable program. The distinction to be made between the project and the program is parallel to the distinction between an objective and a goal. The present conference is an answer because it shows where the project is going. The fact that the program concentrates for the moment at least on three themes of research²² does not contradict the wide-open field of a Digital anthropology. On the contrary, it proves the scientific relevance of the approach developed by Kanagawa researchers. The fact that they chose to limit their field of investigation means that their work supposes other fields and other programs with other researchers. This is how a science is built. To prove it, I simply need to quote the program of the present symposium:

- Comparative study of daily life in early-modern East Asia according to printed images.
- Mapping plough types in East Asia: a comparative and evolutionary approach. Consequences might extend to, for instance, soil management, rural technical cultures, rural social structures and food habits, etc.
- Methodologies for comparing landscape patterns in East Asia. Consequences might extend to land exploitation and ownership, to patterns of urbanization and city planning in East Asia with the goal to preserve landscape patterns.

The Kanagawa project seems to reveal a paradox. The study of the signs and marks of the past (changing landscapes, plough types, old representations of past daily-life, etc) requires the most advanced technology. There is no paradox. These advanced technologies should not be understood as new tools for the study the past. They give us the means to see, to study and understand not the past but the presence of the past, its signs and marks in the present. Digital technology breaks the divide between past and present: it shows how various and intertwined cultural strata organize our societies and daily lives. History is not anymore

²² The three themes are: 1. Illustrated materials; 2. folk implements; 3. landscape.

what is past and needs to be remembered. History is *simply* the complexity of the present, the intertwined strata of our daily lives.

This remark opens other problems and leads to comments concerning the consequences and impact of such a project. I am quite sure that these consequences have been in the minds and debates of the researchers and the managers of the project as well as it is in the minds of all participants to this symposium. What will be the outcome? What will we have in the end? My idea is that we will have maps, *cultural* maps, many different kinds of maps, maps of techniques and practices: maps of ploughing techniques, maps of rural dances and peasant theater, maps of body behaviors, maps of urban designs, of organizing private space, of disciplining bodies to perform a task, be it working the land, drawing images or taking pleasure. The result will be web-base multi-media maps of the techniques and practices, which constitute the texture of our daily lives.

But the main characteristic of these maps might be the most important outcome of the whole project. These maps will reveal new and different borders. They will disclose cultural limits, which never coincide with the borders of empires and Nation-states. These maps will not coincide either with the borders of “civilization” in Samuel Huntington’s sense. Borders separate; limits associate both sides. All these maps do not fit within each other. There is a very high probability that the map of ploughs in an ethnic group will not coincide with a map of a given pattern of courtship or with a map of teaching writing to children. Maps of techniques and practices are never congruent. The maps from below, from bottom up, never fits with maps from top down. All these maps are loosely articulated with each other. They contrast some people and associate others. In the end, the Kanagawa project will produce maps and will put maps over maps in a general process of over-mapping. The maps within which our minds, societies, identities are framed, closed within borders, will be destabilized, overcome and displaced by cultural maps. These cultural maps will distinguish and associate instead of separating. All these maps, these cultural strata will be available on the web, at a click of a mouse. They will strengthen, even generate, new and multiple identities, a different conception of society and history, of individuals and their relations. One is never simply Japanese, Korean or Chinese, nor simply French or German or English. These borders are just how we pay taxes, receive identity cards and passports. How can one belong to one State, to only one history and culture, when one understand that each one of us is a node, a transient but essential link in a sea of practices and techniques.

This project, the people, the researchers, the technologies it associates, is an important achievement in East Asian history. This project has the potential to transform the collective image East Asian people have of themselves, of their past and present and also their future. East Asians might have the possibility to understand themselves beyond their present borders. But they will not recognize themselves, as members of one “civilization” with borders drawn by a common set of believe. Samuel Huntington has a poor and a wrong conception of culture: it might be efficient to train students for the State Department with the

pretension to manage the “world order”. People might understand themselves as an open system of practices, themselves indefinitely linked to other cultural systems. All this might one day be seen on-line in the Internet.

This comment might be understood as a philosophy of the project. What is remarkable is that a philosophy, an ideology or a simple creed, cannot express the full meaning of such a project. This brand of “post-modern” philosophy has little interest and impact. What is important is not the philosophy but the proof behind it. What is important are all the proofs, demonstrations and experiences built and provided by researchers, anthropologists, sociologists and historians of technology. These proofs show the reality of mappings and over-mappings in East Asia. The proof makes the difference, the recorded proof and the resulting maps. The science of digital anthropology will in the end make the difference, structure the debates about East Asian past and future. This is a project we will all benefit from.